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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE:

APPLICANT: Takeshi SEKIGUCHI et al.)
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DEVICE FOR PROVIDING A
PRESSURIZED SOLUTION TO AN
APPLYING DEVICE

AMENDED CLAIMS

1. (currently amended) A device for providing a solution for a color filler, which leads the solution from any one of two or more sources of supply to an applying device via a predetermined flow path, comprising:

a middle tank for each of the sources of supply, each middle tank being provided on the way of the flow path connecting each of the sources of supply and the applying device;

a sensor which detects whether an amount of a solution stored in each middle tank is not less than a predetermined lower limit value or not and outputs a signal in association with a detection result; and

a controlling device which discriminates whether the amount of the solution stored in each middle tank is not less than the lower limit value or not on the basis of the output signal from the sensor and performs the predetermined processing in association with switching of the sources of supply when it is decided that the amount of the solution stored in the middle tank is less than the lower limit value.

2. (original) The device for providing a solution according to claim 1, wherein the applying device is configured so as to discharge the solution by a predetermined amount and the lower limit value is set to be not less than a discharged amount

from the applying device for one time.

3. (original) The device for providing a solution according to claim 2, wherein the lower limit value is set in the range of 100 to 150 % of the discharged amount for one time.

4. (original) The device for providing a solution according to claim 1, wherein the maximum amount of the solution which is stored in the middle tank is higher than the lower limit value by predetermined degree of margin.

5. (original) The device for providing a solution according to claim 1, wherein the sensor outputs different signals depending on whether a position of a liquid level of the solution which is stored in the middle tank is not less than a predetermined position or not.

6. (original) The device for providing a solution according to claim 1, wherein the applying device is configured so as to discharge the solution which is provided from one of the sources of supply by a predetermined amount by repeatedly opening an open-close valve which closes the flow path in increments of a predetermined time.

7. (previously presented) A device for providing a solution which leads a solution from any one of sources of supply to an applying device via a predetermined flow path, comprising:

a middle tank which is provided on the way of the flow path connecting each of the sources of supply and the applying device for each of the sources of supply;

a sensor which detects whether an amount of a solution stored in each middle tank is not less than a predetermined lower limit value or not and outputs a signal in association with a detection result; and

a controlling device which discriminates whether the amount of the solution stored in each middle tank is not less than the lower limit value or not on the basis of the output signal from the sensor and performs the predetermined processing in association with switching of the sources of supply when it is decided that the amount of the solution stored in the middle tank is less than the lower limit value,

wherein the applying device is provided with a pump repeating a process to take in the solution by a predetermined amount and a process to discharge the solution which is taken in;

wherein an ante-pump tank for storing the solution to be provided to the pump is provided between the middle tank and the pump as well as downstream of a position where flow paths from each middle tank are converged;

wherein the ante-pump tank is provided with a sensor for a pump which detects whether the amount of the solution which is stored in the ante-pump tank is not less than a predetermined lower limit value or not and outputs a signal in association with detection result; and

wherein the controlling device discriminates whether the amount of the solution which is stored in the ante-pump tank is not less than the lower limit value or not and if the controlling device decides that the amount of the solution which is stored in the ante-pump tank is less than the lower limit value, predetermined processing in association with filling of the solution from the middle tank to the ante-pump tank is carried out.

8. (original) The device for providing a solution according to claim 7, wherein the controlling device prohibits the filling of the solution from the middle tank to the ante-pump tank during the pump is operating.